

wherein X_1 , X_2 and X_3 each is a hydrogen atom or a mercapto group; x , y and z each is an integer of 0 to 8; and in their combinations, formula (1) has at least two mercapto groups,

a polyiso(thio)cyanate compound, and a compound having two or more reactive unsaturated groups and neither a hydroxyl group nor a mercapto group in an amount of 30 to 70% by weight based on the total weight of the composition.

24. The sulfur-containing urethane resin composition according to claim 23 wherein the amount of the compound having two or more reactive unsaturated groups is in the range of 30 to 50% by weight based on the total weight.

25. The sulfur-containing urethane-based resin composition according to claim 23 which contains another polythiol compound or a thiol compound having a hydroxyl group in addition to the polythiol of formula (1).

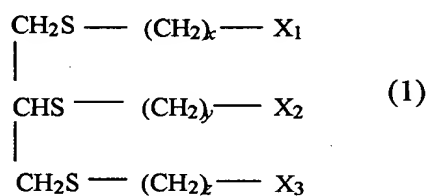
26. The sulfur-containing urethane resin composition according to claim 25 wherein the polyiso(thio)cyanate compound, the compound having the reactive unsaturated groups, the polythiol of formula (1), and the other polythiol compound or the thiol compound having the hydroxyl group is such that a functional group molar

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ratio of { the iso(thio)cyanate group + the reactive unsaturated group } / { the mercapto group + the hydroxyl group } is in the range of 1.0 to 3.0.

27. A sulfur-containing urethane resin composition which comprises a polythiol compound represented by formula (1):



wherein X_1 , X_2 and X_3 each is a hydrogen atom or a mercapto group; x , y and z each is an integer of 0 to 8; and in their combinations, formula (1) has at least two mercapto groups,

a polyiso(thio)cyanate compound, and a compound having two or more reactive unsaturated groups and neither a hydroxyl group nor a mercapto group in an amount of 10 to 70% by weight based on the total weight of the composition, and a photopolymerization catalyst.

28. The sulfur-containing urethane resin composition according to claim 27 wherein the amount of the compound having two or more reactive unsaturated groups is in the range of 30 to 50% weight based on the total weight.

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1 29. The sulfur-containing urethane resin composition according to claim 27 which
2 contains another polythiol compound or a thiol compound having a hydroxyl group
3 in addition to the polythiol of formula (1).

1 30. The sulfur-containing urethane resin composition according to claim 29
2 wherein the polyiso(thio)cyanate compound, the compound having the reactive
3 unsaturated groups, the polythiol of formula (1) and the other polythiol compound or
4 the thiol compound having the hydroxyl group is such that a functional group molar
5 ratio of { the iso(thio)cyanate group + the reactive unsaturated group }/{ the mercapto
6 group + the hydroxyl group } is in the range of 1.0 to 3.0.

1 31. A sulfur-containing urethane resin obtained by polymerizing the composition
2 of claim 23.

1 32. A sulfur-containing urethane resin obtained by polymerizing the composition
2 of claim 24.

1 33. A sulfur-containing urethane resin obtained by polymerizing the composition
2 of claim 25.

1 34. A sulfur-containing urethane resin obtained by polymerizing the composition
2 of claim 26.

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1 35. A sulfur-containing urethane resin obtained by polymerizing the composition
2 of claim 27.

1 36. A sulfur-containing urethane resin obtained by polymerizing the composition
2 of claim 28.

1 37. A sulfur-containing urethane resin obtained by polymerizing the composition
2 of claim 29.

1 38. A sulfur-containing urethane resin obtained by polymerizing the composition
2 of claim 30.

1 39. An optical element which comprises the resin of claim 31.

1 40. An optical element which comprises the resin of claim 32.

1 41. An optical element which comprises the resin of claim 33.

1 42. An optical element which comprises the resin of claim 34.

1 43. An optical element which comprises the resin of claim 35.

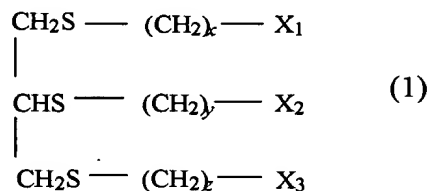
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- 1 44. An optical element which comprises the resin of claim 36.
- 1 45. An optical element which comprises the resin of claim 37.
- 1 46. An optical element which comprises the resin of claim 38.
- 1 47. A lens which comprises the optical element of claim 39.
- 1 48. A lens which comprises the optical element of claim 40.
- 1 49. A lens which comprises the optical element of claim 41.
- 1 50. A lens which comprises the optical element of claim 42.
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- 1 51. A lens which comprises the optical element of claim 43.
- 1 52. A lens which comprises the optical element of claim 44.
- 1 53. A lens which comprises the optical element of claim 45.
- 1 54. A lens which comprises the optical element of claim 46.

- 1 55. A process for preparing a sulfur-containing urethane resin which comprises a
 2 step of curing by irradiating UV rays or visible rays a sulfur-containing urethane resin
 3 composition comprising a polythiol compound represented by formula (1):



- 5 wherein X_1 , X_2 and X_3 each is a hydrogen atom or a mercapto group; x , y and z
 6 each is an integer of 0 to 8; and in their combinations, formula (1) has at least
 7 two mercapto groups,
 8 a polyiso(thio)cyanate compound, and a compound having two or more reactive
 9 unsaturated groups and neither a hydroxyl group nor a mercapto group in an amount
 10 of 10 to 70% by weight based on the total weight of the composition.

- 1 56. A sulfur-containing urethane resin which is obtained by the process of claim
 2 55.

- 1 57. An optical element which comprises the resin of claim 56.

- 1 58. A lens which comprises the optical element of claim 57. --

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